

February 2015
Signature i, LLC



FINDING RELEVANCE AND STRATEGIC ADVANTAGE IN CHANGE

An Environmental Scan and Benchmarking Study of
CESSE Associations

CESSE Association CEOs Find Strategic Advantage in Change

Scientific and engineering societies are creating connected communities for immersive learning, knowledge sharing and global presence to maintain their future relevance. They are keeping what's essential to their mission, while abandoning what isn't to gain greater maneuverability and strategic advantage.

Marsha Rhea, president of Signature i LLC, shared her findings from a recent environmental scan and benchmarking study to kick-off the 2015 CESSE CEO Midwinter Meeting February 9 in Mobile, AL. For this research into change drivers affecting scientific and engineering societies, she scanned existing futures research by CESSE member associations and surveyed 200 CESSE CEOs about their level of response to these changes.

She found four top changes many CESSE associations are making and surmised these may be the community's consensus good practices. Her analysis also yielded a set of top association challenges and opportunities and member challenges within the CESSE community. She characterized the remaining change drivers from her scan as either emergent changes or potential game changers.

CESSE association CEOs can use this report as a tool to foster a strategic conversation with their boards and staff teams. It summarizes the scan and benchmarking research (with details provided in the appendix), poses strategic questions and offers some insights and ideas from the CESSE CEO Midwinter meeting. Use this report to benchmark your association's sense of priority changes and discuss how you may need to respond to these change drivers.

About Our Research Methodologies

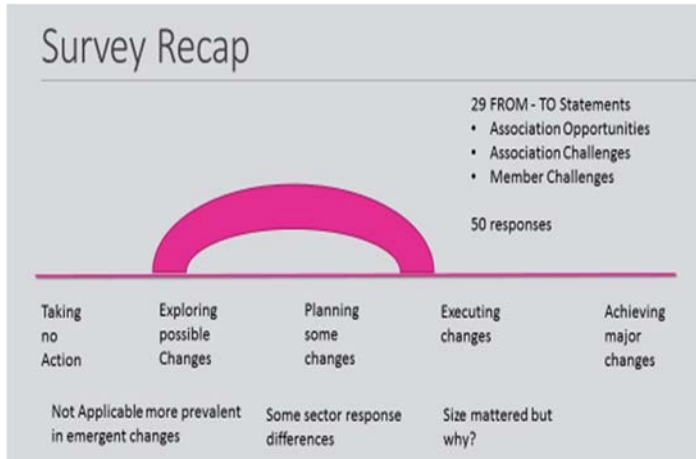
Signature i LLC scanned futures research conducted by a number of CESSE organizations as well as the American Society of Association Executives Foundation research. Signature i, LLC also acknowledges Association of Professional Futurists colleagues for sharing and discussing published futures research.

CESSE Associations Futures Research Reviewed:

- American Industrial Hygiene Association*
- American Association of Anatomists*
- American Chemical Society*
- American Society for Quality
- American Speech-Language-Hearing Association
- ASME
- IEEE
- Project Management Institute

*Signature i client futures scans

Based on this scan research, Signature i crafted 29 statements representing association opportunities, challenges and member challenges into a benchmarking survey. Fifty of the 200 CESSE CEOs responded indicating whether their associations were taking no action, exploring possible changes, planning some changes, executing changes or achieving major change. Very few CEOs reported achieving major change. Most responses clustered in a bell curve around exploring and planning change with the upward edge on the top priorities edging toward executing changes. CEOs could write-in other changes they have prioritized but these write-ins were limited. While this methodology might not stand up as rigorous social science research, it is a sound methodology for identifying the changes CESSE associations are undertaking today.



Respondents could indicate that a change isn't applicable to their association. The emergent changes had a higher proportion of not applicable responses; however, during the meeting discussions it became evident that these changes might have an impact and should be monitored.

An analysis by sector (scientific, engineering and health-focused scientific societies) found a few differences worth noting. Associations with larger memberships or budgets are more likely to be executing the

majority of these changes. Size shouldn't matter because even smaller association can amplify their efforts around the priorities they do choose. (The appendix contains a breakdown by sector and size for the top association opportunities and challenges and member challenges.)

The CESSE CEO Midwinter Meeting is designed as a peer-to-peer exchange. This summary report includes the insights, ideas and solutions CEOs offered as their responses to these changes.

Consensus Good Practices

The four statements of change that consistently scored the highest, regardless of association sector and size, can be categorized as consensus good practices.

- **Mission/Impact Focused Governance.** CESSE associations are obsessing less about how to steward members' resources to serve their interests and instead are focusing on mission and impact. Associations are trying to live up to their vision for their profession or field—what they want to achieve in the world.
- **Global Presence/National Community.** Even associations with their early roots in local chapters are now working hard to sustain a national community and create a global presence. The national community is organized around shared interests rather than geography. And global presence depends on relationships and networks cultivated around the world.
- **Nimble Decision Making.** CESSE associations are breaking out of the lockstep processes of strategic and annual planning and budgeting to be more open to nimble decision making. These associations are still disciplined, but they are trying to move at the rate of change.
- **Millennial Leaders Rising.** CESSE associations are embracing the rise of their Millennial leaders and the energy and passion they offer to take their associations to new places.

Why Change Challenges Associations

STASIS/FROM	CHANGE/TO
Security	Risk
Resolved power & authority	Fluid power & authority
Competence	Learning
Clear sense of success	Opportunity discovery

Strategic Question: What behaviors are undermining these consensus good practices in your association?

Top Opportunities & Challenges for CESSE Associations

Change drivers can bring both opportunities and challenges. CESSE associations are capitalizing on global diversity and working to create a connected community. Where CESSE associations experience challenges, something essential in the association's business model is undergoing change.

Global diversity:

- **Global democratization of research and education opportunities.** Emerging market countries are investing in research and development and in higher education to lift their people and economies. This gives CESSE associations much fertile ground for establishing global relationships with scientists, engineers and other professionals.
- **Demographics and education opportunity diversifying science & engineering workforce.** US census data, lagging though it is, does show that more minorities and women are moving into careers in science and engineering. CESSE scientific associations report experiencing this shift to a greater degree. The US population is rapidly becoming majority minority; the student population already is. While CESSE associations shouldn't ease up on efforts to attract and retain a diverse profession, this changing population provides a tailwind.

Roundtable Exchange: Insights, Ideas & Solutions on Global Diversity

- *International memberships growing because US still is vital scientific center*
- *Analyze journal authoring participation; for some more than 50% are non-US authors*
- *Take your science into international settings; may have to overcome US members' reluctance to attend nondomestic meetings*
- *Partner with sister associations in other countries*
- *Even if American is in your name, add a tagline that says global home or international forum*
- *Offer member discounts to people from underdeveloped countries*
- *Make board appointments to increase global participation*
- *Employ staff members in other countries*
- *Offer engagement opportunities for Millennials*

Connected community: Associations are striving to become always connected immersive communities. Scientists, engineers and other professionals have to engage in continuous learning to keep up with changing knowledge and skills. They seek learning and professional networking onsite, on-demand and through virtual experiences. Offering webinars and virtual conferences is only a beginning. Associations can help members establish their own personal learning ecologies and engage in immersive learning. This immersive learning will need to be accessible anywhere, functioning much like a virtual answer desk or mentor and coach always available in those random moments when people need to connect, learn or relate to others.

Roundtable Exchange: Insights, Ideas & Solutions on Connected Community

- *Auto-subscribe members to jumpstart communities*
- *Provide valuable content even if you have to buy it from others*
- *Automate key tasks in the member experience*
- *Encourage more self-regulating discussions*
- *Redefine the practitioners you serve as markets well beyond people who will join*
- *Integrate online community by dissolving existing communities of practice*
- *Curate knowledge generated in community discussions*
- *Take content to other established communities like LinkedIn*
- *Reinforce physical meetings with virtual experiences*
- *Associations need technology infrastructure to support communities*

Challenges to an association's essential business model:

- **One of many information & knowledge sources via search & sharing strategies.** CESSE associations face serious challenges to their position as trusted sources of information and knowledge. First associations tried to offer portals. Then they took comfort that they could be the best curators. Now with the advances in search and information sharing platforms, most associations are just one of many sources. And sometimes "trusted" is not even factored in. People will choose the good enough answer every time if they find it first and the price is right. That's disruptive innovation.

Roundtable Exchange: Insights, Ideas & Solutions on One of Many Knowledge Sources

- *Align with people who share your values*
 - *Now competing with consultants looking for lead generation*
 - *Young members are able to build their own peer networks*
 - *Engage in content marketing to demonstrate relevance*
 - *Create clinical practice portals and curate knowledge around clinical topics; translate research studies into practice*
- **Return on investment from conference attendance.** Associations organize their year around annual conferences and major gatherings and their business model often relies on meeting revenues. Two powerful factors are threatening this essential business model: in these economically cautious times, meetings must prove their return on investment; and if the cost of

attending a meeting is too high, people are open to a good enough solution that costs less and fits into their busy lives.

Roundtable Exchange: Insights, Ideas & Solutions on Conference Return on Investment

- *Connect participants with thought leaders, influential people in the field*
- *Create a sense of community during the meeting; use technology to sustain the community*
- *Examine new models for developing conferences, i.e. crowdsourcing presentations*
- *Capitalize on the ability of CVBs to provide an experience as an intangible value*

- **Ad hoc & microvolunteering.** Associations depend on the knowledge and expertise of volunteers to produce value. Fewer people are now inclined to see volunteering as a professional privilege and duty. If there is a faster, good enough way to serve their profession and gain recognition, they would rather do that than serve years going up the association's leadership ranks. For this reason, more associations are reworking their volunteer structures to accommodate microvolunteering or ad hoc volunteering, essentially offering more opportunities and recognition for short-term, high-impact assignments.
- **Dominate or operate as a niche.** More organizations are challenging the assumption that growth is a good success measure. When mission impact matters most, having the right people may be more important than having lots of people. Associations are rethinking business models

Strategic Question: Is it still essential to your business model to be THE ESSENTIAL association for your field? If you let this mindset go, what MANEUVERABILITY do you gain?

based on growth. Large, historic associations may still be able to dominate their field. For others a niche strategy is making sense. Mid-sized associations have the most difficult time, because they are still trying to do it all, yet with declining success.

Top Member Challenges for CESSE Associations

These four member challenges are top priorities for CESSE associations; however, the survey respondents indicated these are a lower priority than the changes directly affecting the association. Associations can create member value by anticipating and responding to these member challenges.

- **Virtual and Contingent Workforce.** Engineering societies seem to be leading the way in helping members who are now part of the contingent workforce. Engineering is organized around project teams and these teams often rely on virtual work. While the size of this virtual workforce is not well documented, the trends favor continued growth. Employers like this ability to control costs and adapt their workforce to changing requirements. Talent market platforms like oDesk are efficiently matching workers with opportunities. And some people find they prefer flexible work. These contingent and virtual workers are likely to have different needs than association members in more traditional work settings.

- **Collaborative Research.** CESSE associations are well positioned to help members conduct research that reaches beyond their institutions to engage practitioners, clinicians, patients and companies in the supply chain. With research shifting more to applied research, scientific and engineering society members need efficient ways to engage with practitioners and end users; their associations can facilitate these connections.
- **Professional Identity.** Associations play a critical role in defining their professions or industries. CESSE has many once well-defined disciplines within its ranks that are now becoming blurred or marginalized with the shift into interdisciplinary work. These professionals have an intense need to explain why their work remains relevant. Their associations can help them establish critical roles in these interdisciplinary teams.

*Strategic Question:
What is changing for your members and redefining what they need from your association?*

Emergent Challenges & Opportunities

The lower rated change drivers in the benchmarking survey can be categorized as emergent challenges and opportunities. Some associations are exploring them and making changes; other associations are not sure these are applicable to them. Each association will need to conduct its own surveillance to determine whether and when these challenges and opportunities offer strategic advantage for creating member value and maintaining relevance. These emergent change drivers are organized into four subsets: technology transformations, society matters, research alternatives, and career shifts.

Technology Transformations

- **Analyzing data from multiple sources to identify market opportunities & target services.** Many associations still struggle to manage today's member and customer data well, but they need to go beyond these familiar data sets. They can start using this data as well as data from other sources to target and deliver solutions members can't get anywhere else. Some exciting early examples depend on members sharing private data to create robust research for everyone. Members may resist sharing for competitive or liability reasons. Few associations have people on staff with the quantitative literacy to interpret the data. While data visualization may help with this challenge, this too is a competency.
- **Open publishing ecologies blending multimedia and human & artificial intelligence.** An open publishing ecology draws on an association's capacity to create a connected community that can openly and transparently share knowledge, not as products, but as a system of services. And what form might that knowledge take? Associations will be expanding beyond print to multimedia and offering highly automated environments that may involve machine intelligence supporting human intelligence. Envy the associations that get to build an open publishing ecology around IBM's Watson.

*Strategic Question:
What emergent change drivers does your surveillance tell you might offer strategic advantage for your members and stakeholders?*

Society Matters

- **Global responsibility for grand challenges.** The next generation of corporate social responsibility for CESSE organizations is to help society meet its grand challenges. There's nothing more relevant than taking the lead in health, energy, water, food and public safety.
- **Your audience has audiences that define & shape your public image.** Associations often need a strong public identity to achieve their mission. Today that image is increasingly shaped by other thought leaders and bloggers with their own audiences and social reach. These are transparent and fast-moving times and associations have to be prepared to reach beyond their primary audience to reach their audience's audience.

Research Alternatives

Research and development is very important in the CESSE community of associations. The federal investment in research has been relatively stable but declining as a percentage of discretionary spending. Plus national research priorities shift from year to year. What's emerging to fill this void are platforms for collaborative research, content sharing and funding, like ResearchGate and Kickstarter. These options may seem strange and potentially impure to scientists and engineers. Associations can help their members navigate this world of collaborative R&D and make informed decisions.

Career Shifts

- **Creatively redefining employment opportunities and career pathways.** All associations promise to help their members be successful in their careers or business. What it takes to be successful, however, is changing in serious ways. Those clear pathways of academic preparation into defined career opportunities are being replaced by a more chaotic and creative marketplace for jobs. Scientific and engineering graduates are finding jobs where their academic preparation is in demand in new interdisciplinary ways. This can be good, but education and career pathways will need to be redesigned to connect people with these opportunities.
- **Bridgers & T shaped individuals.** The people who are in demand in the talent markets are people who can thrive in interdisciplinary endeavors. They're the bridgers and the T-shaped individuals. They bridge across fields (that's the top of the T), but they also have a depth in a particular area of expertise (the stem of the T).
- **Microcredentialing and badging competencies.** Associations engaged in credentialing should take a look at the competency education movement which promotes what people can do in smaller and more focused areas regardless of the time they have in a job or the degrees they may hold. Microcredentialing and badges are better suited to fast-changing job requirements than traditional 4-5-6 year efforts to earn a professional credential.
- **Automation & app-ification of technical expertise.** For a more dystopian view of the future of work, associations should examine what automation and the app-ification of expertise might mean to their members. The robots of popular culture may not be coming, but apps and artificial intelligence will supplant some human expertise. Associations can help members define what human expertise has to offer to the future.

Game Changers Challenge Assumptions

A game changer causes a major disruption in how we believe our world works, our paradigms or business models. Although these three change drivers rated low in the CESSE CEO survey, they could be potential game changers for associations.

- **Total customized member experience.** Most associations have standard membership categories, set dues and defined services. In the future it will be feasible and perhaps desirable to offer a fully customized member experience. Members will expect their associations to know who they are, what they want and be able to deliver it exactly the way they want it. Technologies can help automate this total customer experience. Associations are having trouble implementing this level of complexity. Many businesses are chasing this level of customer relationship, and if they succeed in a meaningful way, it will ramp up expectations associations will have to meet.
- **STEM interest via maker movement, citizen scientists.** Scientific and engineering associations have been advocating for STEM education for decades. A few associations have taken note of the maker movement and interest in citizen science. If these interests take off, scientific and engineering associations could find they are no longer coping with ignorance and distrust and discover a future where science and engineering is the exciting place to be.
- **Crowdsourced standards setting & guidelines.** In the survey, CESSE CEOs appear to doubt whether standards and guidelines can be developed in something other than tedious, contentious processes. Don't discount the increasing capacity to collaborate in very complex endeavors. Perhaps standards and guidelines will not be crowdsourced in today's primitive sense, but they could be developed in a more dynamic and responsive way. If associations can ever crowdsource standards and guidelines, they will find very little is impossible when people collaborate through their associations.

*Strategic Question:
What would be the
greatest game
changers for your
association and how
ready are you to
respond?*

Stay Relevant and Create New Value

CESSE associations need to continue scanning for emerging changes and benchmarking with each other to stay relevant and create new value for their members. In 2015 the best course seems to be embracing a future as a connected community for immersive learning, knowledge sharing and global presence. The CESSE CEOs in Mobile also evoked another powerful future image. Associations will need to become T-shaped organizations with deep knowledge in their fields and their essential programs and services, while building partnerships and relationships across a collaborative, networked world. CESSE associations should never say never to any change driver because professional traditions change and people expect new solutions and capabilities. And just as the CESSE CEOs witnessed in February in Mobile, execution matters in both Mardi Gras parades and association management. The best strategies will fail without good planning and tremendous attention to the details.

Appendix Contents

1. Benchmarking Survey Average Responses for All Change Drivers
2. Top Change Driver Responses by Sector and Size
3. Survey tool—to conduct your own analysis
4. Closing Session Feedback on Changes Associations Will Be Pursuing

Benchmarking Survey Average Responses for All Change Drivers

The majority of the responses clustered around exploring possible changes and planning some changes to get ready. Associations with large memberships and larger budgets were more likely to be executing changes to shift strategy although only a few changes, included below in the good practices section, had more than a 1/5 of the respondents saying they were making major changes. There were no significant write-in comments describing other changes. This suggests these results may be reasonably descriptive of the changes now under consideration or underway within CESSE associations.

This was the survey scale for describing the level of response to these changes within an association:

- 1 = taking **no action** at this time
- 2 = **exploring** possible changes
- 3 = **planning** some changes to get ready
- 4 = **executing** changes to shift our strategy, programs and services
- 5 = **achieving** major changes in our strategy, programs and services

CONSENSUS GOOD PRACTICES—CESSE Associations Are Changing		
FROM	TO	Weighted Average
1. FROM governance focused on stewarding member resources	1. TO governance focused on achieving mission and impact/outcomes	3.98
2. FROM national presence with strong, local communities	2. TO national community with growing global presence and connections	3.83
3. FROM strategic & annual planning aligned with budget cycles	3. TO nimble decision making responsive to an increasing speed of change	3.38
4. FROM boomer retirement & decline	4. TO rise of the Millennials in leadership	3.37
TOP ASSOCIATION STRATEGIC OPPORTUNITIES		
5. FROM U.S. dominance in science & engineering education and research	5. TO Global democratization of research and education opportunities <i>(not health/scientific)</i>	3.23
6. FROM episodic and conference-centric learning	6. TO continuous learning on-demand, on-site and virtual experiences <i>(not scientific)</i>	3.10
7. FROM struggling to attract diverse people to STEM careers	7. TO demographics & educational opportunity diversifying the science & engineering workforce <i>(only scientific)</i>	3.09
8. FROM episodic opportunities for networking	8. TO always connected immersive communities <i>(not scientific)</i>	3.08

TOP ASSOCIATION CHALLENGES		
FROM	TO	Weighted Average
9. FROM trusted authority for curated quality data and information	9. TO one of many information & knowledge sources available through search & sharing strategies	3.38
10. FROM face-to-face meetings as professional perks	10. TO justifying the return on investment for conference attendance <i>(Not scientific)</i>	3.20
11. FROM pursuing a growth strategy	11. TO choosing strategically to either dominate your field or serve a niche <i>(Not engineering)</i>	3.15
12. FROM traditional & Structured volunteering as professional privilege & duty	12. TO ad hoc and microvolunteering to attract busy, high talent/profile leaders <i>(Only health/scientific)</i>	3.0
TOP MEMBER CHALLENGES—LIMITED CHANGE RESPONSE		
FROM	TO	Weighted Average
13. FROM physical work & in-place worksites	13. TO virtual work, contingent workers/freelancers & distributed workplaces <i>(Only engineering)</i>	3.20
14. FROM pure & translational research in dedicated research institutions	14. TO applied & translational research engaging practitioners, clinicians and supply chain partners <i>(Not engineering)</i>	2.97
15. FROM respected, defined & well-resourced discipline	15. TO competing with hot new interdisciplinary fields in academia & research <i>(Only scientific)</i>	2.73

EMERGENT CHANGES		
FROM	TO	Weighted Average
16. FROM credentialing based on class hours and knowledge acquired	16. TO microcredentialing & badging tied to competencies demonstrated	2.11
17. FROM managing member & customer data to deliver service	17. TO analyzing data from multiple sources to identify market opportunities & target service	2.88
18. FROM deploying scientific and engineering expertise to spur economic growth	18. TO accepting global responsibility for grand challenges in health, energy, water, food, public safety	2.89
19. FROM refereed publications as cash cows and gatekeepers of professional credibility	19. TO global knowledge networks and open publishing ecologies blending multimedia and human & artificial intelligence	2.42
20. FROM an exclusive and influential voice for the profession/discipline	20. TO your audience has audiences that define & shape your public image	2.76
21. FROM institutions & grant-funding driving the structure of the research enterprise	21. TO platforms for collaborative research discovery, content sharing & funding in an era of declining financial resources	2.50
22. FROM highly skilled and in-demand professions	22. TO the automation & app-ification of technical expertise	2.02
23. FROM career pathways & job tenure	23. TO multiple careers and career pathways	2.89
24. FROM increasing specialization for career advancement	24. TO bridgers & T-shaped individuals in demand as team leaders	2.27
25. FROM steady source of research grants & contracts from government & industry	25. TO steady decline in available sources of research funding	2.20
26. FROM sufficient employment for entering professionals	26. TO creatively redefining employment opportunities in a challenging job market	2.26
GAME CHANGERS if THEY OCCUR		
27. FROM standard membership categories, set fees and defined benefits and services	27. TO customized membership with dynamically responsive total customer experience	2.38
28. FROM championing STEM education to create economic opportunity	28. TO igniting STEM interest through citizen scientists & the maker movement	2.2
29. FROM systematic & structured standard-setting processes	29. TO ad hoc crowdsourcing standards for new products & processes	1.7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Top Change Driver Responses by Sector and Size--X Indicates a Change Response of 3 or Above													
2	Change Driver	Overall Average Priority	Scientific	Health Scientific	Engineering	< \$3 Mllion	\$3-\$10 Million	\$10-\$30 Million	\$30+ Million	< 5000 members	5,000 to 9999	10,000 to 24,999	25,000 to 100,000	Over 100,000
3	TO governance focused on achieving mission and impact/outcomes	3.98	x	x	x	x	x	x	x	x	x	x	x	x
4	TO national community with growing global presence and connections	3.83	x	x	x	x	x	x	x	x	x	x	x	x
5	TO nimble decision making responsive to an increasing speed of change	3.38	x	x	x		x	x	x		x	x	x	x
6	TO rise of the Millennials in leadership	3.37	x	x	x	x	x	x	x		x	x	x	x
7	TO global democratization of research and education opportunities	3.23	x		x		x		x			x	x	x
8	TO continuous learning on-demand, on-site and virtual experiences	3.1		x	x			x	x		x	x	x	x
9	TO demographics & educational opportunity diversifying the science & engineering workforce	3.09	x				x	x						
10	TO always connected immersive communities	3.08		x	x		x		x		x		x	x
11	TO one of many information & knowledge sources available through search & sharing strategies	3.38	x		x	x	x	x	x	x	x	x	x	x
12	TO justifying the return on investment for conference attendance	3.2		x	x			x	x		x	x	x	x
13	TO choosing strategically to either dominate your field or serve a niche	3.15	x	x			x		x			x	x	x

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Top Change Driver Responses by Sector and Size--X Indicates a Change Response of 3 or Above													
2	Change Driver	Overall Average Priority	Scientific	Health Scientific	Engineering	< \$3 Mllion	\$3-\$10 Million	\$10-\$30 Million	\$30+ Million	< 5000 members	5,000 to 9999	10,000 to 24,999	25,000 to 100,000	Over 100,000
14	TO ad hoc and microvolunteering to attract busy, high talent/profile leaders	3		x		x						x		x
15	TO virtual work, contingent workers/freelancers & distributed workplaces	3.2	x		x		x	x	x	x		x	x	x
16	TO applied & translational research engaging practitioners, clinicians and supply chain partners	2.97	x	x		x			x		x	x		x
17	TO competing with hot new interdisciplinary fields in academia & research	2.73	x			x			x			x		x
18	TO microcredentialing & badging tied to competencies demonstrated	2.11												
19	TO analyzing data from multiple sources to identify market opportunities & target service	2.88	x	x				x	x			x	x	x
20	TO accepting global responsibility for grand challenges in health, energy, water, food, public safety	2.89	x	x					x				x	x
21	TO global knowledge networks and open publishing ecologies blending multimedia and human & artificial intelligence	2.42							x					
22	TO your audience has audiences that define & shape your public image	2.76			x				x				x	x

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Top Change Driver Responses by Sector and Size--X Indicates a Change Response of 3 or Above													
2	Change Driver	Overall Average Priority	Scientific	Health Scientific	Engineering	< \$3 Mllion	\$3-\$10 Million	\$10-\$30 Million	\$30+ Million	< 5000 members	5,000 to 9999	10,000 to 24,999	25,000 to 100,000	Over 100,000
23	TO platforms for collaborative research discovery, content sharing & funding in an era of declining financial resources	2.5				x								
24	TO the automation & application of technical expertise	2.02												
25	TO multiple careers and career pathways	2.89							x				x	x
26	TO bridgers & T-shaped individuals in demand as team leaders	2.27												
27	TO steady decline in available sources of research funding	2.2							x					
28	TO creatively redefining employment opportunities in a challenging job market	2.26												
29	TO customized membership with dynamically responsive total customer experience	2.38												
30	TO igniting STEM interest through citizen scientists & the maker movement	2.2												x
31	TO ad hoc crowdsourcing standards for new products & processes	1.7												

CESE Associations Change Drivers Survey—Future Shifts in Associations

Instructions: This survey examines changes affecting scientific and engineering societies and their members. These changes are expressed as shifts FROM what we have experienced TO what we could experience in the future. These shifts are organized into three categories: association opportunities, association challenges and common member challenges. Any change shift can hold both opportunity and challenge, so these categories are only here to help you move through the survey. You should respond to each shift indicating the degree of change this shift is generating in your association. After completing this survey, compare your association’s answers to other CESE associations in the report, *Finding Relevance and Strategic Advantage in Change* by Signature i, LLC.

To respond, please use this scale:

- 1 = taking no action at this time
- 2 = exploring possible changes
- 3 = planning some changes to get ready
- 4 = executing changes to shift our strategy, programs and services
- 5 = achieving major changes in our strategy, programs and services

You are also invited to use a write-in box to describe any shifts (challenges or opportunities) your association is experiencing that we have not included in the survey.

We ask that you provide some basic information about your organization. We want to identify any important patterns in how different associations are responding to these shifts.

ASSOCIATION OPPORTUNITIES		
FROM	TO	1-5 Impact on Your Association
1. Standard membership categories, set fees and defined benefits and services	1. Customized membership with dynamically responsive total customer experience	
2. FROM episodic and conference-centric learning	2. Continuous learning on demand, on-site and virtual experiences	
3. Episodic opportunities for networking	3. Always connected immersive communities	
4. credentialing based on class hours and knowledge acquired	4. Microcredentialing & badging tied to competencies demonstrated	
5. Systematic & structured standard-setting processes	5. Ad hoc crowdsourcing standards for new products & processes	

FROM	TO	1-5 Impact on Your Association
6. Managing member & customer data to deliver service	6. Analyzing data from multiple sources to identify market opportunities & target service	
7. National presence with strong, local communities	7. National community with growing global presence and connections	
8. Deploying scientific and engineering expertise to spur economic growth	8. Accepting global responsibility for grand challenges in health, energy, water, food, public safety	
9. U.S. dominance in science & engineering education and research	9. Global democratization of research and education opportunities	
10. Struggling to attract diverse people to STEM careers	10. Demographics & educational opportunity diversifying the science & engineering workforce	
11. Championing STEM education to create economic opportunity	11. Igniting STEM interest through citizen scientists & the maker movement	
12. Governance focused on stewarding member resources	12. Governance focused on achieving mission and impact/outcomes	
ASSOCIATION CHALLENGES		
13. Trusted authority for curated quality data & information	13. One of many information & knowledge sources accessible through search & sharing strategies	
14. Refereed publications as sacred cash cows and gatekeepers of information & credibility	14. Global knowledge networks and open publishing ecologies blending multimedia and human & artificial intelligence	
15. Face-to-face meetings as professional perks	15. Justifying the return on investment for conference attendance	
16. An exclusive and influential voice for the profession/discipline	16. Your audience has an audience of audiences in defining your public image	
17. Strategic & annual planning aligned with budget cycles	17. Nimble decision making responsive to an increasing speed of change	
18. Traditional & Structured volunteering as professional privilege & duty	18. Ad hoc and microvolunteering to attract busy, high talent/profile leaders	
19. Boomer retirement & decline	19. Rise of the Millennials in leadership	
20. Pursuing a growth strategy	20. Choosing strategically to either dominate your field or serve a niche	
COMMON MEMBER CHALLENGES		
21. Career pathways & job tenure	21. Multiple careers and career pathways	
22. Respected, defined & well-resourced discipline	22. Competing with hot new interdisciplinary fields in academia & research	

FROM	TO	1-5 Impact on Your Association
23. Physical work & in-place worksites	23. Virtual work, contingent workers/freelancers & distributed workplaces	
24. Highly skilled and in-demand professions	24. Automation & App-ification of technical expertise	
25. Increasing specialization for career advancement	25. Bridgers, T-shaped individuals in demand as team leaders	
26. Sufficient employment for entering professionals	26. Creatively redefining employment opportunities in a challenging job market	
27. Steady source of research grants & contracts from government & industry	27. Steady decline in available sources of research funding	
28. Pure & translational research in dedicated research institutions	28. Applied & translational research engaging practitioners, clinicians and supply chain partners	
29. Institutions & grant-funding driving the structure of the research enterprise	29. Platforms for collaborative research discovery, content sharing & funding	

30. If you would like to provide any additional information on any of the shifts described above, please use this space.

31. Please use this space to describe any changes your association is facing that have not been addressed in this survey.

Closing Session Feedback on Changes Associations Will Be Pursuing

In the closing session at the CESSE Midwinter Meeting, participants were divided into four groups to travel around the room and provide their answers to these four questions to share their insights and commitments to change. This is a recap of what appeared on the four question flipcharts.

- I. **What good practice will you insist your association adopt or affirm?**
 - a. Evaluate cybersecurity especially with staff working remotely and cloud-based IT
 - b. Volunteer leadership training with hand-off meeting with past president to president and executive director
 - c. Identifying competencies for volunteers and staff to develop with a professional development plan
 - d. Benchmarking with CESSE
 - e. Intentional plan for staff
 - f. USE CESSE drop box for shared ideas
 - g. Start with a single discussion forum, not segments

- II. **What strategic change/opportunity will you try?**
 - a. Broader customer base, not just members
 - b. Leadership training
 - c. Enhancing staff training
 - d. Communications internal and external to increase value
 - e. Developing internal resources, people
 - f. Operating in your niche
 - g. Engaged and focused governance adaptability
 - h. Re-envisioning governance structure
 - i. Partnerships with other nonprofits and potential mergers
 - j. Demonstrate value proposition in meetings, publications, advocacy
 - k. Utilizing more data in planning to become more market driven than traditional planning allowed. Mega trend? More mission driven.
 - l. Strategic about new business
 - m. Be one of the hot, new interdisciplinary organizations
 - n. Strategic about resources, in-house versus out

- III. **What emergent changes will you monitor for their increasing relevance to your association?**
 - a. Cybersecurity
 - b. Microvolunteering
 - c. Developing next generation leaders
 - d. Wiki development of standards and guidelines
 - e. Providing strategic and customized communication and training
 - f. Rise of open access/public access mandates including open data
 - g. Tracking volunteerism and recognition
 - h. For profits and private foundations moving into not-for-profit space
 - i. Scholarly communication networks, i.e. ResearchGate and Academia.com
 - j. Aggregation of publishing landscape
 - k. Attracting, engaging and retaining Millennials
 - l. Future international growth
 - m. Research funding
 - n. Changing K-12 and higher education landscape

- o. Blending of nontraditional areas
- p. Best business practices

IV. How has this CESSE learning experience **changed** your **view of the future**?

- a. Going global—different paradigm, growth of European associations, engaging Chinese partners effectively,
- b. Governance (while good) should be a best practice not a driver. Nominating Committee may be a good place to spend more time.
- c. Impact/engagement versus number of members
- d. We must change then we can thrive
- e. Impact of government mandates requiring open access
- f. Partnering, collaborating, cooperating
- g. Regulatory burdens more generally, travel restrictions
- h. Threats of cybersecurity especially with lack of resources some CESSE associations have
- i. Arriving at CESSE prepared to learn and engage—how to facilitate so other CEOs have an enhanced learning experience

Marsha Rhea, CAE, created Signature i, LLC to help leaders of organizations discover, plan and do their signature work in the world. She specializes in helping associations achieve their vision for the future. This business blends the strategic perspective and creative skills she gained as a futurist with her more than 20 years' experience in association management.



She scans for critical changes affecting associations and the professions and industries they serve and uses these insights to help associations shape future-focused strategy and drive innovation. For the CESSE Midwinter Meeting, she scanned CESSE member organizations' futures research to identify drivers of change that could require changes in strategy, business models and member services.

Marsha has led strategic planning projects and signature initiatives for a diverse range of national associations and federal agencies. She is an innovative facilitator of collaborative learning experiences for small leadership teams or large, high-stakes summits.

More information is available about Signature i and Marsha Rhea's experience and approach at www.signaturei.net. Or contact, mrhea@signature.net or 703-731-8811.